In the Claims:

The following listing of claims replaces all prior versions and listings of the claims

1. – 16. (canceled)

17. (Previously presented) An arrangement (1) for real-time control of a welding operation that utilizes a welding head (11), said arrangement comprising:

a device (2) for monitoring a welding area of an object (14) during welding, said device (2) comprising

means for reproducing (3) the welding area;

at least one filter (4) arranged in front of or in the reproducing means (3); and

a source of ultraviolet radiation, other than said welding head (11), that is configured and disposed so as to illuminate the welding area with ultraviolet radiation having at least one predetermined ultraviolet wavelength when the welding operation is being performed;

wherein said filter (4) comprises a band-pass filter configured for filtering around the predetermined ultraviolet wavelength;

a CPU-based device (9) having installed thereon image-analyzing means for analyzing a reproduction image of the welding area produced by the reproducing means (3); and

a controller (10) that receives information based on analysis of the reproduction image that has been performed by the image-analyzing means and that controls at least one welding parameter and/or the position of the welding head (11) on the basis of said information.

18. (Previously presented) The arrangement as recited in claim 17, wherein said image-analyzing means (9) is adapted to measure weld width from the reproduction image.

19. (Previously presented) The arrangement as recited in claim 17, wherein said image-analyzing means (9) is adapted to detect at least one of the position of a welding joint, a gap between two parts to be welded together, and geometry of a weld melt.

20. (Previously presented) A method for monitoring a welding area of an object (14) during a welding process that utilizes a welding head, said method comprising:

during said welding process, illuminating the welding area with ultraviolet radiation of a predetermined ultraviolet wavelength by means of a source other than said welding head;

using a means (3) for reproducing, reproducing the welding area while it is being welded; and

filtering radiation from the welding area in a direction toward said means (3) for reproducing, said filtering being carried out using a band-pass filter (4) around the predetermined ultraviolet wavelength.

21. (Previously presented) The method as recited in claim 20, wherein said predetermined wavelength lies within a wavelength range of 280-450 nm.

22. (Previously presented) The method as recited in claim 20, wherein said predetermined wavelength is shorter than 400 nm.

23. (Previously presented) The method as recited in claim 20, wherein said predetermined wavelength is shorter than 380 nm.

24. (Previously presented) The method as recited in claim 20, wherein said predetermined wavelength is longer than 300 nm.

25. (Previously presented) The method as recited in claim 20, wherein said predetermined wavelength is approximately 365 nm.

26. (Previously presented) The method as recited in claim 20, wherein said predetermined wavelength is approximately 320 nm.

27. (Previously presented) The method as recited in claim 20, wherein said band-pass filter (4) is adapted for filtering within a range which is smaller than 90 nm FWHM around said predetermined wavelength.

28. (Previously presented) The method as recited in claim 20, wherein said band-pass filter (4) is adapted for filtering within a range which is smaller than 70 nm FWHM around said predetermined wavelength.

29. (Previously presented) The method as recited in claim 20, wherein said band-pass filter (4) is adapted for filtering within a range which is smaller than 30 nm FWHM around said predetermined wavelength.

30. (Previously presented) The method as recited in claim 20, wherein said band-pass filter (4) is adapted for filtering within a range which is approximately 10 nm FWHM around said predetermined wavelength.

31. (Previously presented) The method as recited in claim 20, further comprising:

using image-analyzing means, analyzing a reproduction image of the welding area produced by the reproducing means (3); and

controlling at least one welding parameter and/or the position of said welding head (11) based on information obtained by said analyzing said reproduction image.

32. (Previously presented) The method as recited in claim 31, wherein the width of a reproduced welding joint is measured by said image-analyzing means and said at least one welding parameter and/or the position of said welding head (11) is/are controlled on the basis of the measured weld width.

33. (Previously presented) The method as recited in claim 32, wherein the measured weld width is compared with one or more reference values and, in the event of deviation from an approved range being detected, said at least one welding parameter and/or the position of said welding head (11) is/are adjusted.

34. (Previously presented) The method as recited in claim 31, wherein the position of a welding joint and a gap between two parts to be welded together and the geometry of a weld melt are detected, and said at least one welding parameter and/or the position of said welding head (11) is/are controlled on the basis thereof.

35. – 55. (Canceled)

56. (Previously presented) A method for monitoring a welding area of an object (14) during a welding process that uses a welding head, said method comprising:

illuminating the welding area with ultraviolet radiation;

reproducing the welding area with a means for reproducing; and

filtering radiation from the welding area in a direction toward said means (3) for reproducing, said filtering being carried out using a band-pass filter (4) around a wavelength within the ultraviolet wavelength range, and wherein said band-pass filter (4) is adapted for filtering within a range which is smaller than at least one of the following: (a) 90 nm FWHM around said filter wavelength, (b) 70 nm FWHM around said filter wavelength, (c) 30 nm FWHM around said filter wavelength, and (d) 10 nm FWHM around said filter wavelength.

57. (New) The arrangement of claim 17, wherein the reproducing means (3) is arranged such that it obtains a view of the welding area that is oriented at an oblique angle relative to the axis of the welding means 7.

58. (New) The arrangement of claim 57, wherein the reproducing means (3) is arranged so as to view the welding area directly.

59. (New) The arrangement of claim 57, further comprising a mirror that is positioned so as to permit the reproducing means (3) to obtain a reflected view of the welding area.

60. (New) The arrangement of claim 17, wherein the source of ultraviolet radiation is arranged so as to illuminate the welding area directly.

61. (New) The arrangement of claim 17, further comprising a mirror that is positioned such that the source of ultraviolet radiation illuminates the welding area indirectly, via reflection.

62. (New) The method of claim 20, wherein the reproducing means (3) obtains a view of the welding area that is oriented at an oblique angle relative to the axis of the welding head.

63. (New) The method of claim 62, wherein the reproducing means (3) views the welding area directly.

64. (New) The method of claim 63, wherein the reproducing means (3) obtains a reflected view of the welding area.

65. (New) The method of claim 20, wherein the source of ultraviolet radiation illuminates the welding area directly.

66. (New) The arrangement of claim 20, wherein the source of ultraviolet radiation illuminates the welding area indirectly, via reflection.